Application # FA1- 00619-1 (CIRM Institute)

PROPOSAL:

The applicant proposes construction of a five-story building (one floor of which will be below grade) that would connect to an existing multi-story laboratory building. The new facility would include laboratories on the upper floors and shell space in the below grade level that may be finished later for use as a vivarium. The project includes 53,033 assignable square feet (asf) within 87,537 gross square feet (gsf) with a total cost of $80 million. Group 2 Equipment costing $2,160,000 is also included in the project. The requested CIRM funding is $37 million. Overall, the stem cell program is to include 18 Principal Investigators (PIs) of which 10 are to be new hires. A total of 15 PIs of the 18 PIs in the CIRM program would be housed in the new facility. There is also extensive shared space including conference space and shared laboratory space. Core laboratories include a cell bank, mass spectrometer, chemical genomics, cell culture and a training laboratory. Basement level shell space of 9,102 asf is for a future vivarium to support stem cell research. Completion of the project is scheduled for July 2010.

Space Summary Table

Space Category	Amount of Space (asf)	Percent of Total	ASF per PI at 15 PIs
Lab, Lab support & PI Offices	29,865	57%	1,991
Core Facilities	4,324	8%	288
Future Vivarium (Shell)	9,102	17%	607
Other Offices	510	1%	34
Admin and Support	9,232	17%	615
Total	53,033	100%	3,536

STAFF ANALYSIS

VALUE:

Costs:

Cost Summary Table

Cost Category	Total Amount	Amount/PI@15
Building	$80,000,000	$5,333,333
Group 2 Equipment	2,160,000	144,000
Total	$82,160,000	$5,477,333
CIRM Amount	$35,000,000	$2,333,333
Applicant Amount	$47,160,000	$3,144,000

Application # FA1- 00619-1 (CIRM Institute)

The estimated total project cost of $82,160,000 includes construction costs of $65 million, project management and administrative costs of $11million, a contingency set-aside of $4 million and Group 2 Equipment of $2,160,000. The construction cost of $914/gsf is below average ($958/gsf) for applications in this category. The project has a relatively small footprint, but connects at each level to the adjacent building, so the cost per square foot is higher than for a stand-alone building with more mass. The connections might be deemed inefficient, but they provide important program connections to existing cores and related laboratories in the adjacent building. Moreover, the higher cost is partially offset by the considerable amount of undeveloped shell space that is planned to be built-out for use as a vivarium at some future date. The future build-out, however, is not considered part of the CIRM-funded project and is not included in leverage.

The amount budgeted for equipment is modest at $30/gsf. Most of this equipment is for common space and core laboratories because the PIs to be housed in the building will relocate with existing equipment. Future equipment purchases will be tailored to the needs of newly recruited researchers. The value of this equipment, for both existing and future PIs is not considered part of the project cost although the investment by the applicant is substantial. Considering these additional sources of equipment outside the current project funds, the equipment cost per square foot for equipment is reasonable in comparison to equipment budgets for typical laboratory projects ($150+./gsf).

The CIRM cost for laboratory and PI related space (excluding cores) is $1,742,619 per PI, which is 7 % higher than the $1,620,927 average for CIRM Institute applications.

Sustainability & Innovation

The application indicates that the design is expected to achieve a LEED certification at the Silver level.

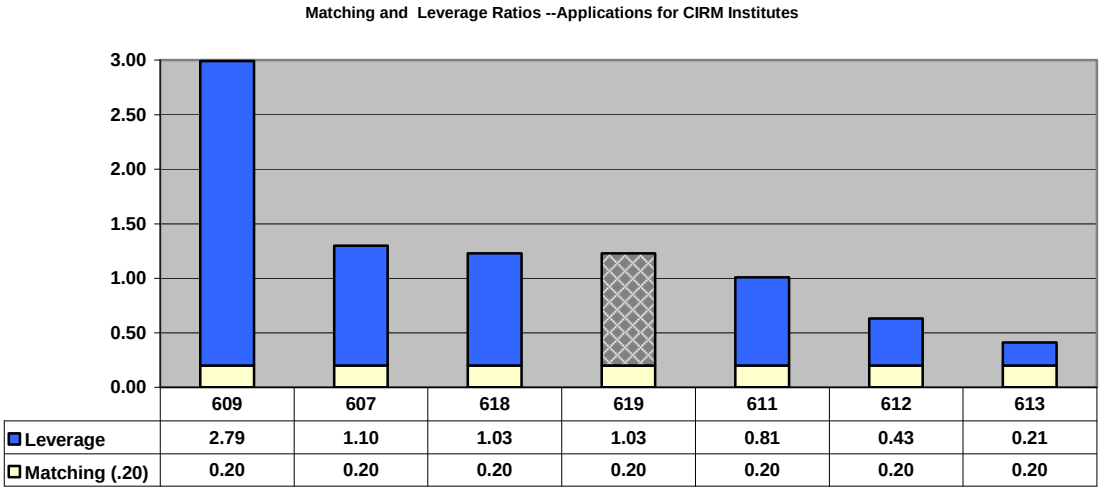
Innovative elements include a high performance building exterior, energy efficient systems and daylighting systems that are incorporated in the design.

The most innovative aspect of this application is the creation of a research collaboration among six member institutions located in the most populated region of the state. A research collaborative is different than a consortium in that the members of the collaboration cooperate on objectives and share resources, but do not form an independent entity as is the case for a consortium. Rather than create stand alone programs with duplicative resource requirements, the collaboration provides the opportunity for more efficient operation and enhanced capabilities that are aligned with CIRM objectives.

Application # FA1- 00619-1 (CIRM Institute)

LEVERAGE:

The application includes leverage of $36,095,000. This represents the institutional investments in excess of the required matching funds after conforming to the allowable amount of fees and administrative costs. The CIRM funds to leverage ratio is 1:1.03. When both the matching and leverage funding are considered, the ratio rises to 1: 1.23. The following table compares the leverage for this application (crosshatched) to the other applicants in the category of CIRM Institutes.



	609	607	618	619	611	612	613
Leverage	2.79	1.10	1.03	1.03	0.81	0.43	0.21
Matching (.20)	0.20	0.20	0.20	0.20	0.20	0.20	0.20

Expenditures for build out of the shell space and Group 2 equipment associated with anticipated recruitments after occupancy of the building will be substantial but are not considered in the leverage calculation. The applicant states that an additional $50 million (over and above the leverage indicated here) has been committed by its leadership to address these future costs.

URGENCY:

The applicant began planning activities for this project in 2007. In 2006, the applicant completed an Environmental Impact Report addressing a total development plan of 560,000 square feet. This project is a portion of that planned development, and some mitigation measures must be addressed before completion of this project. The applicant has selected a general contractor, who will complete the project under a Guaranteed Maximum Price process. In this process, multiple bid packages are awarded to subcontractors under the supervision of the general contractor. The project qualifies for priority consideration because completion is projected within two years from approval of the grant.

The applicant's team for managing delivery of the project has considerable experience working with the applicant. In 2005, this same team completed a 135,000 gsf biomedical

research building very similar to the CIRM-funded project. The applicant notes that early identification of the general contractor provides a distinct advantage over the typical design-bid-build delivery strategy. In this process, the contractor is able to influence the design to achieve savings and speed construction. In the design-bid-build process, the contractor is selected after all design decisions have been made and he or she is not able to influence the design to achieve savings or accelerate the schedule.

SHARED RESOURCES:

This institution has formed a stem cell research collaboration with five other institutions, several of which are recipients of CIRM research grants and CIRM shared laboratory grants. The new facility will be the primary locus of stem cell research for all members of the research collaboration. Numerous existing cores located at this site as well as facilities located at the five other member sites will afford the opportunity for researchers in the building to have access to basic, preclinical and clinical research facilities, including specialized core facilities such as sophisticated imaging cores, nanofabrication laboratories and GMP facilities. Existing vivarium space adds significant value as it is accessible in the adjacent building, and will provide support until the program achieves its full complement of investigators and the demand for animal space warrants investing in the shell space. This strategy of research collaborations and shared use of core space will reduce costs to CIRM.

Cores:

- Center for Biomedicine and Genetics – City of Hope
- Cell Manufacturing Technology Development – City of Hope
- T Cell Engineering and Expansion
- Islet Cell Resource Center – supported by NCRR, NIDDK, and JDRF
- Clinical Hematopoietic Stem Cell Transplantation Program (including a GMP laboratory) – CHLA

FUNCTIONALITY:

While the design of this project offers relatively small laboratory spaces compared to buildings with a larger floor area, work areas are organized efficiently. Their design incorporates various informal or unassigned spaces, including space located within the linking bridges to the adjacent building, which is aimed at providing opportunities for occupants of both buildings to interact on an informal basis. The amount of research laboratory space per resident PI of 1,991 asf is reasonable and the design also anticipates and provides space for visiting investigators. Support space is ample and the limited numbers of core laboratories needed are well located on the second floor with the vivarium shell in the basement and a connecting tunnel to the adjacent building. The first floor provides gathering space and conference space and an extensive mechanical space

that will be easily accessible when the vivarium build-out occurs and mechanical systems are modified to serve that space.

SUMMARY OF ISSUES FOR THE FACILITIES WORKING GROUP EVALUATION

Value and Functionality: The FWG should consider how it will value shell space in its assessment. Shell space is not functioning space, and will depend on future investments in order to bring value to the program. There is a risk that resources may not be available to complete the space as planned, and the initial investment becomes a sunk cost with no return. This risk may be mitigated by the institution's commitment to support additional investigators and their related costs. This commitment might include the build out of the shell space to provide additional vivarium space, though it is not clear that this is intended.